DOCUMENT RESUME

ED 482 671 SP 041 797

AUTHOR	Atwell, Nedra Wheeler
TITLE	Miss Willie and Nora Bonesteel: Teaching in Cyberspace.
PUB DATE	2003-00-00
NOTE	7p.; Paper presented at the Annual Meeting of the Georgia Association of Teacher Educators (50th, Savannah, GA, November 19-22, 2003).
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Computer Uses in Education; *Distance Education; Elementary Secondary Education; *Females; Higher Education; Masters Degrees; *Online Courses; Preservice Teacher Education; Teachers; Teaching Methods; *Womens Education
IDENTIFIERS	*Appalachian People; Western Kentucky University

ABSTRACT

Two of the author's favorite Appalachian women serve as thought mentors to help see the practical and educational opportunities available in cyberspace for meeting the critical shortage of teachers serving the Appalachian women and children of today. In classrooms and homes throughout Appalachia, women and children are logging on to computers to go to school and increase their educational opportunities and learn what characterizes good instructional utilization of technology. In the context of Western Kentucky University's online Masters of Education, this article describes what teachers must know and be able to do in order to implement successfully this type of learning with their students. (Author/SM)

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Miss Willie and Nora Bonesteel: Teaching in Cyberspace

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Nedra Wheeler Atwell, Ed.D.
Associate Professor
Western Kentucky University

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Abstract

Two of the author's favorite fictional Appalachian women serve as thought mentors to help see the practical and educational opportunities available in cyberspace for meeting the critical shortage of teachers serving the Appalachian women and children of today. In classrooms and homes throughout Appalachia, women and children are logging on to computers to go to school and increase their educational opportunities and learn what characterizes good instructional utilization of technology. What are its constituent elements? In the context of Western Kentucky University's online MAE, this article describes what teachers must know and be able to do in order to implement successfully this type of learning with their students.

ED 482 671

According to the U. S. Department of Education, only 20% of the teachers in public schools feel comfortable using the technologies available to them (NCES, 2000). This is a tragedy, but can be remedied by providing them opportunities to gain a working knowledge.

Nationally, statewide, throughout Appalachia and in Southcentral Kentucky where Western Kentucky University is located, there is a critical shortage of special education teachers. The states report a chronic shortage of over 27,000 fully certified special education teachers, along with an annual demand for approximately 28,000 new special education teachers (NCES, 2000). In greatest demand are teachers of specific learning disabilities, emotional disorders, and mental retardation (42%, 17%, and 17%, respectively, of all additional teachers needed). When considered in geographic terms, the need is greatest in rural and inner city areas (NCES, 2000). The demand for special education teachers increases yearly, and is expected to increase at a faster rate than that of other occupations through at least the year 2005.

According to the 20th Annual Report to Congress on the Implementation of the Individuals with Disabilities Act (IDEA) (U.S. Department of Education, 1998), the need for special education teachers has been exacerbated more by the decrease in the number of graduates in special education teacher education programs than by the increase in the number of students served. Between 1987-88 and 1996-96, the numbers of general education and special education students expanded at comparable rates. However, the shortage of special education teachers during that period increased by 31%, in comparison to an increase of 14% in general education. The consistently higher rate of teacher attrition from special education intensifies this discrepancy.

The national shortage of special education teachers is paralleled in Appalachia, Kentucky, and in Southcentral Kentucky. Reports from Kentucky's State Comprehensive System for Personnel Development (CSPD) show that about 1200 positions in high-incidence disabilities were either vacant or held by teachers not fully certified in 2000-2001 (Kentucky Department of Education, 2001).

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During the past decade, the Kentucky Department of Education (KDE) has implemented a number of projects to address the shortage of special education teachers, including direct tuition assistance for coursework leading to special education endorsement for teachers who hold either an emergency or a probationary license. Several alternative routes to licensure also have been implemented. The KDE also grant numerous emergency and probationary licenses each year. In spring 2002, teachers holding an emergency or probationary license filled over 30% of the approximately 4,000 teaching positions in high incidence disabilities in the Commonwealth. Individuals holding an emergency or probationary license have 10 years in which to complete the coursework for the endorsement area in which they are teaching. Often, they find another teaching position or leave the field prior to completing their training and becoming highly skilled educators.

The small, rural school districts characteristic of Appalachia report extreme difficulties in attracting qualified special education teachers. Southcentral Kentucky, where Western Kentucky University is located, has more than its proportionate share of these personnel needs. In 2002, the two KDE superintendent regions in the area (regions two and six) had a total of 600 special education positions in high incidence disabilities that were either unfilled or filled by personnel who were not fully certified. This figure represents over 50% of all teacher shortages in the two regions.

The geography, culture, and economic environment of Appalachia are typical of the conditions that create difficulties for preparing, recruiting, and retraining special education teachers. Although teacher attrition is not necessarily greater for rural than urban schools, it is higher in schools with high percentages of poor students, and in schools where teacher pay and the resources available to teachers are low. The size of the school districts in Southcentral Kentucky range from approximately 15,000 in (largest) to 700 in (smallest). Of these school districts, 90% have a student population under 5,000. Ninety-five percent are characterized as rural areas or small towns; only five percent are characterized as large towns or mid-size cities. Average teacher pay in the region is below the average for the state. Student eligibility for free lunch is also high in these school districts, ranging from 55% to 94. Most of counties in the region are listed as poverty areas. Many Western Kentucky University students are from rural, high-poverty counties of Southcentral Kentucky; high proportions of Western Kentucky University students are first-generation college students.

The school systems in the region are usually able to hire teachers with an emergency license; however, these teachers must take courses to obtain permanent licenses. Teachers who are teaching with an emergency license, as well as teachers who wish to obtain additional endorsements, are faced with the challenge of finding a program that is affordable and convenient. The region's geography is very rural, making travel to universities difficulty. Prospective teachers' professional goals may also be constrained by the need to continue to work while going to school.

In addition to the general shortage in the number of personnel prepared to teach students with high-incidence disabilities, Southcentral Kentucky experiences an acute shortage of teachers endorsed to work with students from more than one category. Western Kentucky University's teacher education programs seek to prepare teachers for service in inclusive and cross-categorical settings and must ensure that these teachers

acquire skills in collaborative and consultative service delivery while obtaining multiple endorsements.

One solution to these problems is Western Kentucky University's online Master of Arts in Education, P-12 LBD Program. Currently, the author is teaching in this program. Most of the teachers in these online classes work in public schools in rural Appalachia. Many of the students are the first generation of their family to go to college. All courses in the program are full of content that has been enhanced with technology. This happens through required online presentations, including the input of digital images, expectations of technology for required lesson development and assessments, the use of digital images to enhance activities, Blackboard, case studies, synchronous and asynchronous discussions, and teacher work samples.

Janice Holt Giles's character, Miss Willie is a favorite of the author. Miss Willie epitomizes a reflective practitioner. Her character models a mixture of passion for learning, knowledge of instructional practice, and commitment to student achievement. In many ways, Sharyn McCrumb's, Nora Bonesteel is an Appalachian sister. Nora shares the same passion for the people she loves and commitment to the things she knows; "the sight" enriches her character. Teaching online requires a unique combination of the skills of both of these fictional characters.

Four different types of technology usage have emerged from the author's teaching and the graduate student's needs. Technology can serve as a knowledge source, data organizer, information presenter or facilitator.

Knowledge Source

Many lessons submitted by the graduate students reflected the use of the World Wide Web (WWW). This was characterized by the identification and use of pre-determined websites. Students were instructed to access the necessary information, and guided by activity sheets, documented responses to the questions provided.

The Internet was not the only technology employed in providing content knowledge during microteaching activities. Some graduate students include audiotapes in their teaching activities; others used video tapes. Teachers report feelings of freedom, since they no longer have to be the sole source of information. Students can engage with technology and be very active participants in their own learning process.

There was a heavy reliance on the technology to provide the content knowledge for the lessons. The teachers primarily used technology to reinforce or deliver traditional modes of instruction in a more efficient manner. Thus, the learner involvement became one of reading and writing the information that was then used in group question and answer sessions. Teachers are comfortable with this aspect of technology; often, stating it allows them to provide accurate information to their students while being physically engaged in other aspects of the lesson such as management.

Data Organizer

Many lessons involved collection of numerical data. Some graduate students used technology in the form of spreadsheets or databases to organize data, but showed weaknesses in their ability to integrate the development of graphic skills and authentic mathematics-related content into their lessons. These lessons typically involved small groups collecting and inputting numerical data, which then was compiled into a whole

class document. If teachers are not careful, students can become passive observers while the teacher manipulated the program and constructed bar graphs from the data.

Many graduate students noted that using technology to compile and project the whole group data was a worthwhile addition to the lessons' development. With elementary children, teachers noted that students needed more guidance.

While collecting and inputting facilitated observation of whole class data, teachers showed weaknesses in their ability to involve the class in data analyses and in the use of other skill such as extrapolating and making predictions from trends and or patterns indicated. In some situations, teachers struggled with translating the data from the tabulated information to the appropriate graphs, and showed weaknesses in their graphing skills and their abilities to manipulate various programs in graph construction. Often their students would step forward to help demonstrating that there were many levels of technology skill in any given situation. When actually teaching the lessons, sometimes the teachers were confused by data analysis and graphing of continuous versus discrete data.

Information Presenter

This was the most common use of technology among the teachers during their microteaching activities. Many of them use the computer as a glorified overhead projector; paying special attention to fonts, colors, and transitions. While, presentation software lends itself to nonlinear forms of communication; many graduate students utilized it in a linear lecture-based fashion. Students learned how to develop PowerPoint presentations and were able to vary sound and colors and to import images. In most cases, hands-on activities were incorporated into the lesson and attempts were made to develop skills. However, the technology was used for information presentation and subsequent fact recall. If students were not careful, preoccupation with the technology can overtake the content of the presentation.

PowerPoint and Inspiration are two programs that show promise in use with students struggling with reading and writing. Both programs allow students with minimal written skills to present information in a polished format. Students experiencing difficulty with sequencing find this very useful. Graduate students were given multiple opportunities to use both software programs.

Facilitator

Active involvement in learning is a hallmark of successful teaching. Many advocate that learning as inquiry can/should be a central goal for students and this will not happen if students memorize facts in isolation. It can be met only when students frequently engage in active inquiries that allow them to raise questions, define issues, collect data, analyze and draw conclusions based on evidence. In some lessons, technology was used to facilitate the inclusion of a number these skills. After multiple chances to incorporate these skills, most of the students achieved this level of technology use.

The graduate students recognized and used technology as an integral component in facilitating inquiry. For example, they would include digital images of what they were studying. These images would be projected via presentation software and formed the basis of the following discussions. Students would then be instructed to observe, talk among themselves about their observations and to recognize and construct explanations. Their responses were solicited in a whole group discussion and the teachers facilitated

higher order thinking skills as they interacted with their students. At the end of the lesson, the image was used again and students were required to write their own explanation of the occurrence.

Parting Thoughts

In June of 2002, when the online program began, hope was strong that it would begin to address the critical shortage of teachers for special needs students. The first cohort of fifty completed their comprehensive examinations August 2003. The current cohort of one hundred and seventy two students will finish their work in August 2004.

While the program is beginning to experience success in meeting the critical shortage, the initial goal, several unexpected added benefits are being noted. Students completing this program are infusing technology into their classroom practice. These students are reporting that they have seen the value of technology in their own learning and are generalizing the practice to their students.

Fostering the development of technology savvy teachers is possible. The experiences these teachers are having in their graduate studies, serve to encourage technology integration within the context of their content lessons. While weaknesses are evident, reasonable progress is being made and they are overcoming their anxiety as observed beginners. Teachers engaged in the use of technology, as a teaching tool in their graduate programs, develop new perspectives on the instructional uses of technology. These teachers are comfortable and knowledgeable in their use of technology as a tool to facilitate student learning. Integrating technology into their graduate training programs gives students opportunities to work through simulated teaching experiences and gain familiarity with the process. Miss Willie and Nora Bonesteel would be pleased.

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****A very special thanks to Sharyn McCrumb and Janice Holt Giles for Nora Bonesteel and Miss Willie.**

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